

<i>Cucullæa olivæformis</i> , <i>Lyc.</i>	<i>Mytilus lunularis</i> , <i>Lyc.</i>
<i>Nucula Jurensis</i> , <i>Queest.</i>	—, sp. indet.
<i>Cardium Hullii</i> , <i>Wright.</i>	<i>Lima Electra</i> , <i>D'Orb.</i>
<i>Unicardium</i> , sp. indet.	— bellula, var., <i>Mor. &amp; Lyc.</i>
<i>Myoconcha crassa</i> , <i>Sow.</i>	— Galathea, <i>D'Orb.</i>
<i>Perna rugosa</i> , <i>Münst.</i>	— ornata, <i>Lyc.</i>
<i>Gonionya angulifera</i> , <i>Sow.</i> , sp.	—, n. sp.
<i>Gervillia Hartmanni</i> , <i>Münst.</i>	<i>Pholadomya arenacea</i> , <i>Lyc.</i>
— fornicata, <i>Lyc.</i>	— fidicula, <i>Sow.</i>
<i>Avicula inaequalis</i> ?, <i>Sow.</i>	—, sp. indet.
<i>Modiola cuneata</i> , <i>Sow.</i>	<i>Myacites arenacea</i> , <i>Lyc.</i>
— Sowerbii, <i>Sow.</i> , sp.	—, sp. indet.
— compressa, <i>Münst.</i>	<i>Rhynchonella cynocephala</i> , <i>Rich.</i>
— unguina, <i>F. &amp; B.</i>	— plicatella, var.

XVII.—*Descriptions of new Ceylon Coleoptera.*

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[Continued from vol. xix. p. 388.]

In the first of these papers (*Annals*, xix. p. 247) I have described a winged species of *Ædichirus*, a genus supposed to be without organs of flight; and I have since (xix. p. 385) given publicity to the more important discovery of wings in the single genus which forms the family of the Georyssi, also hitherto supposed to be apterous; I am now about to announce to some and confirm to others the existence of these organs in the family of the Scydmenidæ, a fact, although incomplete, of more importance than either of the former, considering the extent of the family and the difference of opinion which appears to exist on the subject amongst the most eminent entomological authorities. It is this importance which induces me to enter more fully on the subject.

I am not acquainted with the famous monograph of the family of the Scydmenidæ by Dr. Schaum; however, from the manner in which it is quoted by Lacordaire in his 'Genres des Coleopt.,' I should infer that these two celebrated authors agree in all vital points. In Lacordaire's diagnosis of the family, these insects are described as having (with the exception of the American genus *Brathinus*, of which Lacordaire is not quite sure that it belongs to the family) the elytra soldered together, and being destitute of wings. Now, it is scarcely credible that on a point so easily ascertained as this, any difference of opinion should exist; still, Westwood, in his 'Modern Classification of Insects,' in describing the same family, makes statements which imply the contrary. However, Lacordaire's description, being by fifteen years more recent, and, in fact, the latest, is, if only for

this reason, entitled to be considered before all others; and looking upon it in this light, that is, as the essence of all former observations, I shall for the present occupy myself with it alone. According to this description, as mentioned above, the insects which it regards *have the elytra soldered together and are destitute of wings*. This being the case, I was startled to find that out of the thirteen species described below, nine or ten which I examined in this respect had neither the elytra soldered nor were they destitute of wings;—*on the contrary, the elytra were unconnected in the middle, and the wings were nearly double the size of the whole insect, and could not possibly be overlooked*. I would willingly have supposed that the 100 species of this family contained in European collections, and principally derived from Europe and North America, agreed with Lacordaire's description, and that the Ceylon species were exceptions to the general rule, had not Westwood's observations alluded to above corroborated my own, thus rendering me suspicious of some unaccountable mistake or oversight somewhere or other. That this mistake cannot consist in a slip of the pen or a misprint in the 'Genres des Coleopt.' quoted above, is clear from the obvious care which has in every respect been bestowed upon this work, and from the same remarks being repeated in different words. Where this mistake is, and upon what grounds it rests, it would, under my circumstances, be useless to attempt to unravel. However, it appears certain to me that some more detailed and positive remarks on the subject cannot be superfluous, and must be new to some entomologists. Placing the fullest confidence, as every one would do without hesitation, in the infallibility of the description of the Belgian author, it was not likely that I should have looked for wings at all in the Seydmænidæ (a family to which I have not until lately paid much attention) had I not been struck by seeing the elytra of my *S. alatus* open, when handling it with a fine painter's brush in a drop of water, it being at the time quite out of the question that the opening could have been effected by pressure. On opening the elytra fully, I had no difficulty in discovering the wings. Rendered extremely curious by this discovery—diametrically opposed to the distinct statement of so great an authority as the one just alluded to—I now examined other species, and all with the same result, most of them opening the elytra without my assistance, in the same manner as the *S. alatus*; and I have not the slightest doubt that when a sufficient number of specimens enables me to examine the rest, it will still be with the same result. That these insects use their organs of flight, may be gathered from the following:—At a former period I lived in a house situated on a small eminence, and overlooking extensive groves of cocoa-

nut-trees, cinnamon gardens, paddy-fields, and patches of jungle. Here I collected large numbers of Pselaphidæ, especially *Euplectus*, in thin, scarcely visible spider-webs, with which the white walls of the house were covered in certain places—thus forming one large trap for anything small flying about. That these had been caught here when on the wing, there could be no doubt; but I was much surprised to find with them (what is so common in more congenial localities, here also) a considerable number of *Scydmani*, especially my *S. advolans* and *pubescens*, as they were said, by the most recent authority, to be unable to fly, and the position they then found themselves in was one they could not well, or could not possibly, have got into otherwise than by flying. For some reason or other, I am ashamed to say, I did not follow up the matter at the time; but I am now certain on the subject:—indeed, to remove all doubt, and to settle all disputes, I have just been so fortunate as to take my *S. advolans* actually on the wing, flying in my garden in the evening at sunset.

Having gone so far, I will (in spite of some slight misgivings of being laughed at for telling an old story with so grave a face) add a few descriptive words about the organs in question. The wings of my *Scydmani* are ample, about double the size of the whole insect, oblong, having the margin beautifully ciliated, and, with the exception of a few yellowish veins at the base, without any visible organs of this kind.

In spite of the difference in their shape, &c., I believe all the species described below to be genuine *Scydmani* as restricted at present. Being, however, unacquainted with the sexual distinctions of these insects (which, indeed, I believe not to have been satisfactorily pointed out by any one, and to differ in different species), I should not be surprised if one or two of my species were eventually ascertained to have been separated upon these grounds alone. However, as I have been very reluctant to admit new species, it is just as likely that individuals may hereafter be found united in one, which ought to be separated into two species. But I trust that neither may happen. The species were all collected by myself in the immediate neighbourhood of Colombo; I have, however, no doubt that they occur all over the S.W. of the island, which is of a uniform physical character, and perhaps occupy a still larger portion of it. None of them are quite common; on the contrary, of nearly half of them I possess only one or two specimens. My *S. femoralis* I found under the soft, rotting bark of an *Erythrina indica*; *S. Ceylanicus* and *ovatus* I found dead in spider-webs; *S. gramini-cola*, *glanduliferus*, and *pyriformis* I have hitherto exclusively taken in the sweeping-net on the lawns of my garden about sunset; the other species I have met with indiscriminately in

spider-webs, under rotting vegetable substances, and in the grass.

After this preamble, which I trust may not be deemed quite superfluous, I now enter upon the description of my species, drawing attention previously to the three very natural and very distinct groups which they form, the characteristics of which will at once be perceptible from the headings given below. With regard to the first group (A. I. sp. 30-34) I may mention that the elongated legs, largely developed posterior trochanters, and often distant posterior coxæ, render the motions of the insects belonging to it staggering when walking, which, together with their oblong, subdepressed body, distinguishes them at a glance. I have subdivided them from the cultriform or grooved mesosternal carina. The second group (A. II. spec. 35-41) is equally well characterized by the more robust, pyriform and subconvex body of the insects. *S. pselaphoides* in the former, and *S. advolans* in the present group, form connecting links between the two; especially *S. pselaphoides*, which in general appearance rather belongs to the second; upon closer examination, however, it is easily ascertained to be an anomalous member of the former. From the rounded or narrowed occiput I have divided the second group into two subdivisions, giving preference to the distinctions to be drawn from this part of the body to those to be derived from the thorax, which, from the variety of shapes it assumes, would naturally suggest itself for that purpose; but the gradations between the principal forms appear to me too many, too fine, and therefore too indistinct, to adopt them. As to the third group (B. spec. 42), the insect which alone forms it amongst those described below, is so different from any of the others, that its peculiarities must strike any one at first sight.

A. *Species with a thick neck, abruptly formed and immersed in the thorax.*

I. *Fourth joint of the maxillary palpi not acuminated; head subquadrato-ovate; eyes middling or small, finely granulated, little or not at all prominent; antennæ subapproximate at the base; posterior trochanters elongated at the apex; thorax obovate; body elongate, subdepressed.*

a. *Mesosternal carina slight, simple.*

### 30. *Scydmanus alatus*, N.

*S. dilute brunneus, pedibus antennisque dilutioribus, tarsis palpisque testaceis; pubescens. Long. corp.  $\frac{2}{3}$  lin.*

Antennæ art. 1<sup>o</sup> apice biacuminato, 3-4 subæqualibus, 5 præce-

dente majore, 6 longitudine inter 4 et 5, ovato, 7-8 subæqualibus, 9 majore, 7-9 *apice angustatis, tubiformibus*, 10-11 ovatis, clavam formantibus, *vel* art. 9 globoso, 9-11 clavam formantibus. Palpi maxill. art. ultimo minimo, apice truncato. Mandibulæ dente bifido munitæ, basi fortiter abrupteque dilatatæ. Thorax foveis basalibus nullis. Pedes elongati, tarsi art. 2-3 subæqualibus.

I include in this species individuals with a 2- and others with a 3-jointed antennal club. The latter are further distinguished by having a slight sinuosity in the rounded outline of the basal angles of the thorax, by having the posterior part of the metathorax and the base of the abdomen sensibly incrassated, and the head rather less quadrate than the former. However, the individuals thus distinguished being in all other respects exactly like those with the 2-jointed club, I cannot help looking upon all these distinctions as sexual ones, and uniting the insects in the same species.

The head from the eyes to the neck is of a transverse subquadrate form merging into the oval by the angles being rounded off; the anterior part is narrowed. This is the typical form of the skull in all the five species of this group. The eyes in the present species are middling. The antennæ are rather approximated at the base, and inserted in the centre of the front under a ridge which runs across it from eye to eye. The first joint is biacuminated at the apex; the fifth is longer than the adjoining ones; joints 7-9 in the individuals with the two-jointed, and 7-8 in those with the three-jointed club, are of a peculiar construction, being narrowed at the apex, and fitting into each other like the tubes of a spy-glass. The club-joints are ovate, flat at the base; the last is large and obtusely acuminated. I consider the principal distinguishing character to lie in the remarkable structure of joints 7-9 of the antennæ. The maxillary palpi have joint 2 rather strongly incrassated at the apex; joint 3 obovate, narrowed at the base; joint 4 very minute, truncated at the apex. The mandibles are furnished with a bifid tooth, and are strongly and abruptly dilated at the base. The thorax is of an obovate or obcordato-ovate form, being rather strongly rounded off before the middle and gradually narrowed below it; the usual basal impressions are wanting. The posterior margin has two slight sinuosities; the posterior angles are rounded-off or obliquely truncated. Scutellum obsolete. Elytra furnished with a very short elevated ridge at the shoulder. Legs elongated; coxæ large, the two posterior ones rather distant from each other; two posterior trochanters much elongated, incrassated at the tip; apex of tibiæ subcylindric, but not narrowed, and hairy, especially in the second pair; joints 2-3 of the tarsi of equal size, the first longer, the fourth a little shorter; two

anterior tarsi slightly contracted, second and third pair more and more elongated. Penultimate segment of abdomen with a strong longitudinal groove on the back.

### 31. *Scydmanus femoralis*, N.

*S. statura et magnitudine præcedentis; testaceus. Antennæ art. 3-4 subæqualibus, 5 præcedente longiore, 6-8 gradatim minoribus, subglobosis, 7-8 apice fortius oblique truncatis, 9-11 gradatim majoribus, subglobosis, clavam formantibus. Palpi maxill. art. ultimo minimo, semigloboso. Thorax magnus, obovatus, basi rotundatus, 4-foveolatus. Elytra apice truncata, 2-sinuata. Pedes femoribus 2 posticis medio constrictis, tarsis art. 1-4 gradatim minoribus.*

Of the general appearance of the former, but of a light yellowish colour, and well distinguished by the large thorax, truncated elytra, and abnormal construction of the two posterior femora. Antennæ with joints 7-8 rather strongly obliquely truncated at the apex, 9-11 forming a club, subglobose, flat at the base, the last acuminate and slightly cut away, or even excavated on the inside at the apex. Last joint of maxillary palpi semiglobose; these otherwise the same as in the former. Thorax and elytra of *S. alatus*, the former, however, larger, rounded at the posterior margin, and with four basal impressions; the latter slightly truncated at the apex, and with a slight sinuosity in the truncature on either side of the suture. Scutellum very small. Legs with the tibiæ slightly bent at the base, the apex as in the former; tarsi with joints 1-4 gradually decreasing in size, first pair contracted and furnished with brushes on the inside. The two posterior legs inserted rather distant from each other, the basal part of abnormal construction: the trochanters are much elongated and incrassated at the tip, whilst the femora are at the place of the juncture rather abruptly narrowed, bent and slightly compressed; as they are at the same time thinner than the adjoining apex of the trochanter, the constriction is very striking.

### 32. *Scydmanus Ceylanicus*, N.

*S. alati colore, sed major et magis depressus. Long. corp.  $\frac{3}{4}$  lin. Caput magnum, robustum, thoracis latitudine. Antennæ basi non approximatae, art. 3-4 et 5-7 inter se subæqualibus, arcum formantibus, 8-10 gradatim majoribus, subglobosis, depressis, apice oblique truncatis, 11<sup>o</sup> magno, conico, 8-11 longius pilosis, clavam formantibus. Palpi maxill. art. 4<sup>o</sup> minimo, semigloboso. Thorax ovatus, foveis basalibus nullis. Elytra apice singulatim rotundata. Pedes validi tarsis art. 1-4 subæqualibus, 2 anterioribus art. 1<sup>o</sup> subtus acumine sat forti producto.*

An anomalous species, especially with regard to the antennæ,

which are much less approximated at the base than those of the rest of the species belonging to this group, and with regard to the two posterior coxæ, which, on the contrary, are more approximated than in any of the species just referred to. The insect is of the light brown colour of the two former, but larger and more depressed. The head is strikingly large and heavy, of the width of the thorax; in its hind part, which is strongly transverse, the oval form prevails over that of the square. Eyes small. Antennæ inserted under two strong protuberances rather than under a ridge; their club four-jointed, joints 3-7 forming a section of a circle bent inwards; joints 8-10 strongly compressed, obliquely truncated (subperfoliated), 11 large, conic. The third joint of the maxillary palpi is of an oblongo-ovate shape; the external basal angle is prolonged into a small peduncle inserted in the apex of the second joint; the fourth joint, about the semiglobose shape of which I am not quite satisfied, appears to be obliquely inserted in the tip of the preceding. Thorax oval, of a similar shape to that of the former; anterior margin slightly emarginated. Scutellum obsolete. Elytra with the traces of a humeral costa, separately rounded-off at the apex. Legs strong; two posterior coxæ not more distant from each other than the four anterior ones; tibiæ elongated, bent at the base and apex, at the latter place slightly narrowed, subcylindric and hairy; tarsi with joints 1-4 subequal, in the first pair strongly contracted, joint 1 of this pair produced in a spine on the inside.

b. *Mesosternal carina middling, grooved.*

33. *Scydmanus intermedius*, N.

*S. alati* statura sed major et robustior, colore obscuriore. Long. corp.  $\frac{3}{4}$  lin.

Antennæ art. 1<sup>o</sup> apice biacuminato, 2 et 5, 3 et 4, 7 et 8 inter se subæqualibus, 6 quarto paulo minore, obovato, 7-8 subglobois apice oblique truncatis, 9-11 gradatim majoribus, obovatis, clavam formantibus, 11 acuminato. Palpi maxill. art. 3<sup>o</sup> obovato, 4<sup>o</sup> minimo, semiglobois. Thorax subrotundatus, basi 4-foveolatus. Elytra apice singulatim rotundata. Pedes tarsis art. 1-4 gradatim minoribus vel 2-3 subæqualibus, 4 anterioribus intus pilosis. Mesosternum sat fortiter carinatum, *carina dorso deplanata, fossulata, apice acuminata.*

This species stands in the middle between *S. alatus* and *pselaphoides*. To the former it is allied by its general appearance rather than by anything else, differing from it very much in the structure of the antennæ and the mesosternal carina. To the latter, on the contrary, it is allied by similarity in the structure

of the said carina, differing, however, from it in general appearance. The colour is that of *S. alatus*, but a shade or two darker, the insect being at the same time larger and altogether more robust. The eyes are small. Antennal club three-jointed, the joints forming it gradually increasing in size, obovate, flat at the base, the last acuminate. Scutellum obsolete. Elytra with two slight basal impressions, the traces of a humeral costa, separately rounded-off at the apex. Legs elongated as usual; two posterior coxæ distant; tibiæ straight, subcylindric, but not narrowed at the apex, the four anterior ones hairy; tarsi with joints 1-4 almost imperceptibly decreasing in size, or perhaps 2-3 equal, the anterior ones slightly contracted, these and the intermediate ones hairy on the inside. Mesosternal carina middling, flat on the back, with a shallow, but very distinct, longitudinal groove or excavation, anterior part projecting, acuminate.

### 34. *Scydmaenus pselaphoides*, N.

*S.* subpyriformi-ovatus, subconvexus, magis minusve brunneus, pedibus antennisque subtestaceis, femoribus apice nigrescentibus, tarsis palpisque testaceis; flavo-pubescentis. Long. corp. 1-1½ lin.

Antennæ art. 1<sup>o</sup> mediocri, apice biacuminato, 2-4 sensim minoribus, 5 et 2, 6 et 3, 7 et 8, 9 et 10 inter se subæqualibus, 9-11 clavam formantibus, 6-11 basi rotunde truncatis, 6-8 apice oblique truncatis, 7-8 compressis. 9-11 obovatis. Mandibulæ dente bifido munitæ, basi dilatatæ et ciliatæ. Palpi maxill. art. 3<sup>o</sup> inverte conico, 4<sup>o</sup> minimo apice truncato. Thorax obovatus, latitudine quarta parte longior, basi 4-foveolatus. Elytra apice singulatim rotundata. Pedes validi, tarsi art. 1-4 gradatim minoribus, anterioribus dilatatis, his cum intermediis subtus fortius pilosis. Mesosternum præcedentis.

An anomalous species with regard to its general appearance, which differs considerably from that of the rest of the group, and makes it, as I have remarked above, the connecting link between this and the following group. This is the largest species I have hitherto met with. The system of coloration is the usual one,—more or less deep brown, legs and antennæ lighter, tarsi and palpi very light. Eyes middling. Antennæ with a 3-jointed club, the joints subglobose, flat at the base, the last large, conic; joints 6-8 are slightly truncated at the apex; 7 and 8, being at the same time strongly compressed, have a subperfoliated appearance. The mandibles are furnished with a bifid tooth. The third joint of the maxillary palpi has the shape of an inverted cone, the fourth minute and truncated at the apex. The thorax is of an obovate form, about  $\frac{1}{4}$  longer than broad, rounded-off before and gradually narrowed below the middle, subquadrate at the base, impressed with four foveæ or pits, the posterior angles rounded-off. Scutellum minute. Ely-

tra with two short humeral costæ, separately rounded-off at the apex. Legs stout; two posterior coxæ distant; tibiæ slightly bent at the base, subcylindric at the apex, the four anterior ones hairy; tarsi with joints 1-4 gradually decreasing in size, the anterior ones dilated, the joints transversely triangular, the intermediate pair hairy on the inside. Mesosternum of the preceding. Metasternum with a slight longitudinal depression down the middle. Penultimate abdominal segment grooved on the back, as in *S. alatus*. In the enlargement of the anterior tarsi lies undoubtedly, as in other beetles, a sexual distinction, as it is not equally strong in all individuals. I may mention here, that upon some of the individuals I found ticks (some genus allied to *Ixodes*, but not a *Gamasus*) fastened, one of them having made a wound such as, supposing it to be inflicted at a corresponding place and on a proportionate scale, few animals of a higher order, I think, would have survived; still this little beetle appeared perfectly at its ease. The parasite alluded to had fastened itself right in the centre of the forehead, and the wound it had inflicted in this, one would imagine most dangerous place, was a deep hole or pit with a callous border. The latter led me to infer that the injury was an old one, and the tick being at the time fastened in it (and this so firmly that I had some difficulty in detaching it), I felt sure it had been in this position for months. The injury was observable under a slight magnifier, and to compare it to one inflicted by a rifle-ball, would, I think, be greatly underrating its importance.

II. *Fourth joint of the maxillary palpi acuminated; mesosternal carina strongly developed; eyes large, prominent, coarsely granulated; antennæ distant at the base; two posterior trochanters simple; thorax variable; body robust, pyriform, subconvex.*

a. *Occiput rounded.*

35. *Scydmanus advolans*, N.

*S. long. corp.*  $\frac{3}{4}$  lin. *Antennæ art.* 3 et 4, 5 et 6, inter se subæqualibus, obovatis, 7 majore, subgloboso, 8-10 subglobosis, basi rotunde-, apice oblique-, truncatis, cum 11° conico clavam formantibus. *Palpi maxill. art.* 3° elongato, invertente conico, 4° medioeri. *Mandibulæ* tenues, medio acuminatæ 1-dentatæ, basi abrupte dilatatæ. *Thorax* ovato-rotundatus, apice fortius angustatus, basi leviter 2-sinuatus, 4-foveolatus. *Elytra* apice singulatiim rotundata. *Tarsi art.* 2-3 subæqualibus.

The insect is of a brown colour, the antennæ lighter, the legs

still more so, the tarsi and palpi very light; the femora are dark towards the apex; the head, thorax and suture are occasionally of chestnut-colour; it is, as usual, pubescent. The sculpture of the head in this and the following species is not, as in the preceding, based upon the oblong square or the oval, but rather upon the form of a ball, which, in a more or less compressed state, is always perceptible; in some instances it is narrowed on one side. In the present species the head is heavy and subglobose. The eyes are large, prominent, and coarsely granulated. The antennæ are inserted distant from each other under two protuberances of the anterior part of the forehead. The club is four-jointed, the joints composing it being flat at the base, and, with the exception of the last, obliquely cut away at the apex, the last itself being conic. The maxillary palpi have joint 3 rather elongated, and of the form of an inverted cone; joint 4 middling, acuminate. The thorax is of a rounded-oval shape, and rather strongly narrowed towards the apex. The scutellum is obsolete. The elytra have the usual rudimentary costæ at the shoulders, and are separately rounded-off at the apex. The legs are middling; two posterior coxæ inserted close together; trochanters all simple; tibiæ slightly bent at the base, narrowed and subcylindric at the tip, the four anterior ones hairy; tarsi with joints 2-3 subequal, the first a little longer and the fourth shorter, the two anterior ones slightly contracted. I include in this species some individuals which slightly differ from the foregoing description, being more robust, covered more densely and with longer hair, especially on the occiput and thorax, with the latter rather obconico-ovate, and the costæ of the elytra more distinct, and, moreover, occasionally of a chestnut colour.

### 36. *Scydmanus pubescens*, N.

*S.* præcedente gracilior; long. corp.  $\frac{2}{3}$  lin. Antennæ art. 3 et 4, 5 et 6 inter se subæqualibus, subcylindricis, 7° secundo paulo minore, fortiter cylindrico, 8-10 subglobosis, cum 11° conico clavam formantibus. Palpi maxill. art. 3° inverte conico, 4° minuto. Mandibulæ tennes, medio obtuse obsoleteque unidentatæ, basi abrupte dilatatæ. Thorax conicus, latitudine haud longior, basi 4-foveolatus. Elytra et pedes præcedentis, tibiis tamen apice leviter arcuatis.

Less robust than the former, and further distinguished from it by the seventh antennal joint (the one preceding the club), which is of a strongly cylindric shape, by the minuteness of the last joint of the maxillary palpi, the obtuse and nearly obsolete tooth of the mandibles, the short conical form of the thorax, and the tibiæ, which are slightly bent at the apex.

37. *Scydmaenus pygmaeus*, N.

*S. statura et colore præcedentis sed longius pubescens et sesqui minor; long. corp.  $\frac{1}{3}$  lin. Antennæ art. 3 et 4, 5 et 6 inter se subæqualibus, 7<sup>o</sup> majore, ovato, 8-10 subglobosis, fortius compressis, cum 11<sup>o</sup> clavam formantibus, hoc magno, obconico, apice obtuso. Palpi maxill. art. 2<sup>o</sup> tenuiore, 3<sup>o</sup> invertè conico, 4<sup>o</sup> minuto. Mandibulæ obsolete midentatæ. Thorax conicus, latitudine parum longior, elytris fortiter applicatus, basi 2-sinuatus et 4-foveolatus. Pedes et elytra præcedentis, his tamen amplioribus.*

Strongly allied to the two preceding species, but very much smaller, more compact, and covered with longer hair,—thus of rather a different appearance regardless of its size. From *S. pubescens* this species would principally differ in the shape of the seventh antennal joint, also in that of the first three club-joints, which are much more compressed and more hairy in *S. pygmaeus*. The thorax of the latter is more firmly applied to the base of the elytra, the latter have a fuller and more robust appearance about them, the palpi are more slender, and the tooth of the mandibles is pointed. From *S. advolans* it would principally differ, besides the generalities mentioned above, in the shape of the thorax and in some of the points in which it differs from *S. pubescens*.

b. *Occiput narrowed.*38. *Scydmaenus glanduliferus*, N.

*S. robustus; long. corp.  $\frac{3}{4}$  lin. Antennæ art. 3-7 sensim majoribus, 8-10 globosis, fortiter compressis, cum 11<sup>o</sup> glanduliformi clavam formantibus, longe ciliatis. Palpi max. art. 2<sup>o</sup> tenuiore, 3<sup>o</sup> invertè conico, 4<sup>o</sup> mediocri. Thorax conicus, latitudine basali haud longior, elytris fortiter applicatus, basi 2-impressus, in impressionibus 2-foveolatus. Tarsi art. 2-3 subæqualibus.*

Of the size of *S. advolans* and the plump shape and colour of *S. pygmaeus*, the latter being rather lighter than that of *S. advolans*; it has the longer hairy vesture of the former (especially on the occiput and thorax). The occiput is slightly narrowed behind. The antennal club is composed of four joints, the first three of which are strongly compressed, the fourth being plump, and of the shape of an acorn with its cup; all are strongly ciliated. The thorax is conic, firmly applied to the base of the elytra, as in the preceding species, depressed, and with two pits at the base, posterior margin with two sinuosities. The shoulder-ridges of the elytra are short, but rather strongly marked. The tibiæ are narrowed, subcylindric, and hairy at the apex. Joints 2-3 of the tarsi are subequal, the anterior pair more, the intermediate less contracted.

39. *Scydmanus graminicola*, N.

*S. gracilior*; long. corp.  $\frac{3}{4}$  lin. Antennæ art. 3 et 4, 6 et 7, 9 et 10 inter se subæqualibus, 5<sup>o</sup> adjacentibus paulo longiore, 3-7 subcylindricis, 8 subgloboso, 9-10 fortiter globosis cum 11<sup>o</sup> clavam formantibus. Palpi maxill. art. 3<sup>o</sup> inverte conico, 4<sup>o</sup> mediocri. Mandibulæ apice arcuatæ, medio acuminate 1-dentatæ, basin versus *sensim dilatatae*. Thorax obconicus, basi depressus, 2-sinuatus et 2-foveolatus, rectangulatus. Pedes *tibiis elongatis* basi apiceque arcuatis.

Of the usual brown colour, legs and antennæ lighter, tarsi and palpi very light; femora nigrescent at the apex; hairs of occiput and thorax rather long, the former slightly narrowed behind; the head thus of a somewhat rhomboid form. Antennal club composed of three joints, the first two of which are strongly globose, the last being acuminate and slightly cut away on one side at the apex. The mandibles are furnished with an acuminate tooth at the middle, bent at the apex, and, what is rather uncommon in this genus, gradually enlarged towards the base. The thorax is obconic, rather longer than broad. The elytra are somewhat more extended than usual in this group; the rudimentary humeral costæ are rather prominent, they are separately rounded-off at the apex. Tibiæ more or less elongated, slightly bent at the base and apex, at the latter place subcylindric and hairy. Tarsi with joints 2-3 subequal, first pair slightly contracted. A sexual distinction appears to be expressed in the length of the tibiæ, which are less elongated in certain individuals, which are at the same time less robust than the others. The insect is easily distinguished by its general appearance.

40. *Scydmanus pyriformis*, N.

*S. supra castaneus*, subtus brunneo-testaceus, pedibus antennisque dilutioribus, tarsis palpisque flavo-testaceis, antennarum clava nigricante. Long. corp.  $\frac{1}{2}$  lin.

Antennæ art. 3-8 fere subæqualibus, excepto 5<sup>o</sup> parum longiore, 8<sup>o</sup> subgloboso, minore, 9-10 subglobosis majoribus cum 11<sup>o</sup> acuminate clavam formantibus. Palpi maxill. art. 3<sup>o</sup> inverte conico, 4<sup>o</sup> minuto. Thorax obovatus, basi 2-foveolatus. Pedes coxis 2 posticis distantioribus; tibiis 2 anterioribus basi apiceque leviter arcuatis, reliquis subsimplicibus; tarsis art. 2-3 subæqualibus.

A pretty little species, at once distinguished by its colour, which is chestnut, darker at the base and suture of the elytra, and light, more or less brownish or yellowish, below; the antennæ being of the latter colour, with a nigrescent club. The occiput is slightly narrowed; the head altogether plump, heavy, and transverse. The antennal club is composed of three sub-

globose joints, the last of which is acuminate and slightly cut away on one side, as in some of the preceding species. The thorax is obovate, broadest below the middle, and gradually narrowed towards the apex. The elytra have the usual two shoulder-ridges, and are rather strongly dehiscant at the apex. The two posterior coxæ are rather distant at the base; the tibiæ are slightly angustated and subcylindric at the apex, the four anterior ones hairy; the first pair, moreover, slightly bent at the base and apex, but the rest nearly straight.

#### 41. *Scydmanus angusticeps*, N.

*S. castaneus*, antennis pedibusque dilutioribus, tarsis palpisque testaceis. Long. corp. 1 lin.

Caput magnum, subtrigonum, occipite *fortiter angustato*, hoc et thorace longe pilosis. Antennæ art. 3 et 4, 5 et 6 inter se subæqualibus, 7-11 gradatim majoribus, vel 9-10 subæqualibus, subglobosis, 8-10 leviter depressis, cum 11° clavam formantibus. Palpi maxill. art. 2° tenuiore, 3° invertè conico, 4° mediocri, conico-acuminato. Thorax obconicus, basi subquadratus, 2-sinuatus et 4-foveolatus. Elytra costis 2 fortioribus abbreviatis. Tibiæ subrectæ.

A handsome species, of a chestnut colour, more or less deep, with lighter legs and antennæ. The head is large, heavy, and, from the eyes to the neck, strongly triangular; the occiput and thorax are covered with long hair, which adds much to the peculiar appearance of the insect. The antennæ are thick and robust, the club 4-jointed. The thorax is subquadrate at the base up to the middle, and conic towards the apex. The punctures or pits at the base are four in number. The scutellum is small. The humeral costæ are more strongly developed than in any of the other species, and traceable to the middle of the elytra. The tibiæ are nearly straight, subcylindric at the apex; the four anterior ones hairy. The tarsi have joints 2-4 nearly subequal.

#### B. *Species without a neck.*

#### 42. *Scydmanus ovatus*, N.

*S. ovatus*, convexus, brunneus. Long. corp.  $\frac{1}{2}$  lin.

Caput subquadrato-ovatum. Antennæ art. 3-11 sensim incrassatis, 9-11 subglobosis, depressis, cum 11° magno, conico clavam formantibus. Palpi maxill. art. 4° minuto, acuminato. Thorax *amplus, semiorbicularis*, margine posteriore medio producto, basi 2-foveolatus. Tarsis art. 1-4 subæqualibus.

The colour of this insect is, as usual, shaded-off from brown

to light yellow; however, in other respects it differs materially from all the preceding species. The body is regularly oval; thorax and elytra convex, pubescent. The head is subquadrate-ovate; the eyes rather small, but prominent; the neck is altogether wanting. The antennæ are as distant from each other at the base as they can be, being inserted below the eyes; the club is three-jointed; the joints increase gradually in size from the third to the eleventh. The maxillary palpi have the second joint slender, the third rather pear-shaped, the fourth minute and acuminate. The thorax is very ample, semiorbicular, of the shape and nearly the size of the apical half of the elytra; the basal angles are acuminate, and slightly envelope the shoulders; the posterior margin is prolonged in the middle towards the scutellum; the foveæ or basal impressions are two, and rather distant from each other. Scutellum obsolete. Elytra with two depressions at the base. Tibiæ straight; tarsi with joints 1-4 subequal, or very nearly so. Mesosternal carina middling.

[To be continued.]

XVIII.—*Remarks on the Lias of Barrow in Leicestershire, compared with the lower part of that Formation in Gloucestershire, Worcestershire, and Warwickshire.* By the Rev. P. B. BRODIE, M.A., F.G.S., Vice-President of the Warwickshire Naturalists' Field Club\*.

During a late visit to the well-known Lias quarries at Barrow-on-Soar, I was able to compare the various sections there exposed with those in the equivalent beds in Warwickshire, Worcestershire, and Gloucestershire; and, although I could detect no remains of Insects, nor even a trace of them †, the position of the strata, and their lithological characters, are identical with the true *Insect limestones* in the counties above mentioned.

As Mr. Jukes has already described the lower Lias at Barrow and the neighbourhood in 'Potter's Charnwood Forest,' it will be needless for me to repeat those sections; but it will be necessary to give one not referred to by him, taken from an upper quarry of Mr. Lee's, in order to identify the beds,—where we have, in descending order,

\* Read to the Cotteswold Naturalists' Club, January 27, 1857.

† Although, in the short examination I was able to give the Barrow limestones, I could discover no Insect remains, nor could hear of any ever having been found, it is possible that a closer research would detect them.